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On the arrangement of the leaflets in ferns and cycads, by A. Braun. (The leaflets in the former have the posterior edge of the one leaf covering the anterior edge of the one behind it; the leaflets in cycads are the reverse of this. There are said to be a few exceptions in ferns.) *Halle:* On the anatomical structure of the roots of certain *Convolvulaceæ*, by Schmitz (This paper is of pharmaceutical interest, being devoted to the detection of adulterations in drugs of the order, such as jalap.) A contribution to the subject of the vitality of seeds, by H. Hoffmann (elsewhere noticed). Some other notices are unavoidably deferred.

ZOÖLOGY.

THE EXTINCTION OF THE GREAT AUK AT THE FUNK ISLANDS. — Mr. Michael Carroll, of Bonavista, Newfoundland, has recently given me the following very interesting facts respecting the extermination of the great auk (*Alca impennis*) at the Funk Islands. In early life he was often a visitor to these islands, and a witness of what he here describes. He says these birds were formerly very numerous on the Funk Islands, and forty-five to fifty years ago were hunted for their feathers, soon after which time they were wholly exterminated. As the auks could not fly, the fishermen would surround them in small boats and drive them ashore into pounds previously constructed of stones. The birds were then easily killed, and their feathers removed by immersing the birds in scalding water, which was ready at hand in large kettles set for this purpose. The bodies were used as fuel for boiling the water. This wholesale slaughter, as may well be supposed, soon exterminated these helpless birds, none having been seen there, according to Mr. Carroll, for more than thirty years, and he expresses great doubt in respect to the existence of the species now anywhere about the islands of Newfoundland or Labrador. — J. A. ALLEN.

BEWICK'S WREN, *Thyothorus Bewicki*, is something of a rarity, I believe, in the Atlantic States, where its movements, and especially its breeding resorts, are not very well made out. It may, therefore, be worth while to here record the fact that it breeds in considerable numbers in these same mountains. I saw two or three individuals during my ride up and down the mountains; and, though I found no nests, the actions of the birds satisfied me that they were at home for the summer. — ELLIOTT COUES.

RANGE OF THE BAY IBIS. — A letter from Captain C. Bendire, U. S. A., to E. Dickinson, Esq., dated Camp Harney, Oregon, says, "I have lately discovered that *Ibis Ordi* breeds near here. An officer has sent me portions of a skin, sufficient for identification, and writes me that he saw the young birds, besides some forty old ones." — ELLIOTT COUES.

EARLY NESTING OF THE ANNA HUMMING-BIRD. — In the Ornithology of California, i. 359, I stated that the young of *Calypte Anna* are sometimes hatched as early as March 15th, but never having met with eggs, I was not aware until this year that such is their usual habit near San Francisco. The extensive cultivation of Australian trees may, perhaps, have helped to make this early nesting more general, as in this climate such trees, as well as other subtropical garden plants, are covered with flowers, supplying winter food for these humming-birds more plentifully than the native plants formerly did. But whether a "new departure" or not, my boy (eight years old) found three nests of this species within a stone's throw of the house, between February 15th and 20th, all on low branches of the Eucalyptus (or Australian blue gum), between ten and twenty feet above the ground. These trees are covered most of the winter with large flowers, in which there is much honey, and the acacias of several species, also blooming at this season (like most *antipodal* trees), have been very attractive to the hummers, as well as to minute insects on which they feed. They have likewise utilized the long, silky stamens of some acacias in building their nests, though still using chiefly the down from various native herbs, the platanus, willow, etc., besides going a long distance to find lichens to adorn the nests outside, although there are none of these parasites on their favorite gum-trees.

I have since seen another nest built on a densely-leaved twig of a Monterey cypress, adding to the variety of locations before described, and this was a few yards only from a noisy hotel on the main road. To add to the completeness of their history I watched one nest to note time of incubation, and found it sixteen or eighteen days *at least* [while the Eastern species needs but thirteen.— *Brewer*]. One brood was hatched before March 1st, another on the 5th. This is while only two truly summer visitors have arrived, the *Hirundo bicolor* (January 30th) and *Selasphorus rufus*, the latter (Nootka hummer) first seen February 16th, but does not build until April or May.

In the nest observed, one young died, but the other was fledged and left it on March 30th, quite able to make short excursions for food in fifteen days. I had seen fledged young ones about the Eucalyptus trees several days earlier, so that they must hatch in many nests as early as March 1st. Three cold rains occurred during the development of the one I watched. During all the time of development both of eggs and young there have been white frosts at night and fresh, piercing cold winds during the day. As with the Nootka Hummers the females perform the task of hatching and feeding the young entirely by themselves, the males disappearing from the lowlands and gardens after the eggs are laid, and retiring among the richer flowers of the mountain cañons.

My correction of Nuttall's account of the nest of this species is confirmed by these specimens, which are much larger than that he describes, being 1.75 inch, instead of 1.25 wide, etc. But as he caught the female on the nest, with the eggs in it, and describes the bird (as *Trochilus icte-*

rocephalus), at the same time stating that it is the one mentioned by Audubon as the female of the Anna, he must have made an error in measuring it, especially as he gives the height correctly. His specimen, by the way, is mentioned by Baird and others as a "*male* with forehead covered with yellow pollen." This mistake may arise from its having a red metallic patch on the throat, not mentioned in their descriptions of the female, but I can state from seeing hundreds of females in spring, that they *have* this patch as well as young males in fall. The female Nootka hummer has it also, as late authors state, though Nuttall was doubtful about it.

I may add that the only other small bird yet building here is the bluebird (*Sialia Mexicana*), and this only inside of buildings or hollow trees. — J. G. COOPER, Haywood, Alameda County, Cal.

INTELLIGENCE IN THE HAWK MOTH. — While watching the sudden unfolding of the flowers of the *Œnothera Lamarkiana*, we observed that the hawk moths never visited the same flowers twice, even when frightened away by some motion made by us. On returning, they would go only to those flowers that had opened during their absence, or that had not been visited before their flight. — J. M. MILLIGAN.

PERFORATION OF ORANGE SKINS BY MOTHS. — The proboscis of Australian moths of the genus *Ophideres* is said to be so stiff, and even barbed, that it is capable of perforating the most resisting envelopes. The moths thus perforate oranges in order to feed upon their juices. M. Künckel has examined the specimens forwarded to him by M. Thozet, a French botanist, and says, "It is incorrect to call the proboscis rigid, as it curls up in the usual way; but instead of a soft terminal portion, it has a hard one. The two adpressed maxillæ terminate in a sharp triangular point, furnished with two barbs. They then swell out and present on the lower surface three parts of the thread of a screw, while their sides on the upper surface are covered with short spines springing from a depression with sharp, hard sides. These spines are to tear the cells and the pulp of the oranges, as a rasp opens those of beet root, to extract the sugar. The upper portion of the proboscis is covered from below and on the sides with fine serrated striæ disposed in a half helix, which give it the qualities of a file. These striæ are from time to time interrupted by small non-resisting spines, which serve as tactile organs. The orifice of the canal by which the liquids ascend is situated on the lower face, below the first thread of the screw.

"Not content with examining *Ophideres Fullonica*, I studied *O. salaminia*, *O. materna*, and *O. imperator*, which all had auger-like probosces. The structure of these maxillæ affords a generic character of great value; it moreover establishes a closer relation between the lepidopters, the hemipters, and certain dipters which have maxillæ adapted to pierce tissues." — *Monthly Microscopical Journal*, London.

THE EUROPEAN TREE SPARROW IN THE UNITED STATES. — It will interest ornithologists to know that the tree sparrow of Europe (*Pyrgita montana*) has lately been discovered to be a resident of the United States.

The resemblance of this species to the English house sparrow has led me to be on the watch for it since the introduction of the latter, but without success until I found it in St. Louis, Mo., last spring. Here I found the new species abundant, but was unwilling to take any until the breeding season was over. Four skins sent to Mr. G. N. Lawrence, of New York, are pronounced by him to "agree accurately with the plate and description of this species." He also informs me that about five years ago Mr. Eugene Schieffelin noticed fifty or sixty of these birds in the store of a bird importer in New York, where they were unrecognized; and these were probably afterwards sold as or with *P. domestica.* This is undoubtedly the explanation of their occurrence here, and further search will very likely show their presence in other localities.

With a general resemblance to the common house sparrow, *Pyrgita montana* is readily distinguished by its chestnut crown and the similarity of both sexes and the young. In St. Louis it considerably outnumbers *P. domestica*, and, as is the case in Europe, it prefers the outskirts of the city and the country. In other respects these two species closely resemble each other. — DR. JAMES C. MERRILL, U. S. Army.

ANTHROPOLOGY.

ANTIQUITY OF MAN. — Mr. Southall, in his late work on the Recent Origin of Man, founds an argument against the antiquity of man's origin in the fact that what are unquestionably paleolithic implements are occasionally found on the surface of the ground, either alone or associated with neolithic or polished stone implements. There are two reasons why such a commingling of the two forms does not militate against this division of an unquestioned stone age. It should be remembered, in the first place, that paleolithic implements, after being long buried in strata of sand or gravel, may become exposed by floods, landslides, or through ice-action, as when an ice-gorge causes a river to cut for itself a new channel, thereby sweeping away the soil over a considerable belt of country. Subsequently, the river resumes its older channel, and the newer implements in time are dropped and so mingled with the exposed older forms. From what I have seen of the action of the Delaware River along its valley, especially between the cities of Trenton and Bordentown, in New Jersey, I have satisfied myself that such may have occasionally been the case during the occupancy of this neighborhood by the Indians. Secondly, if the Indians were the first and only inhabitants of the Atlantic coast of America, prior to the arrival of the Europeans, it is quite certain that they were a paleolithic people when they reached these shores, and whatever may have been the geological changes subsequently, they maintained their ground, and very gradually learned to